

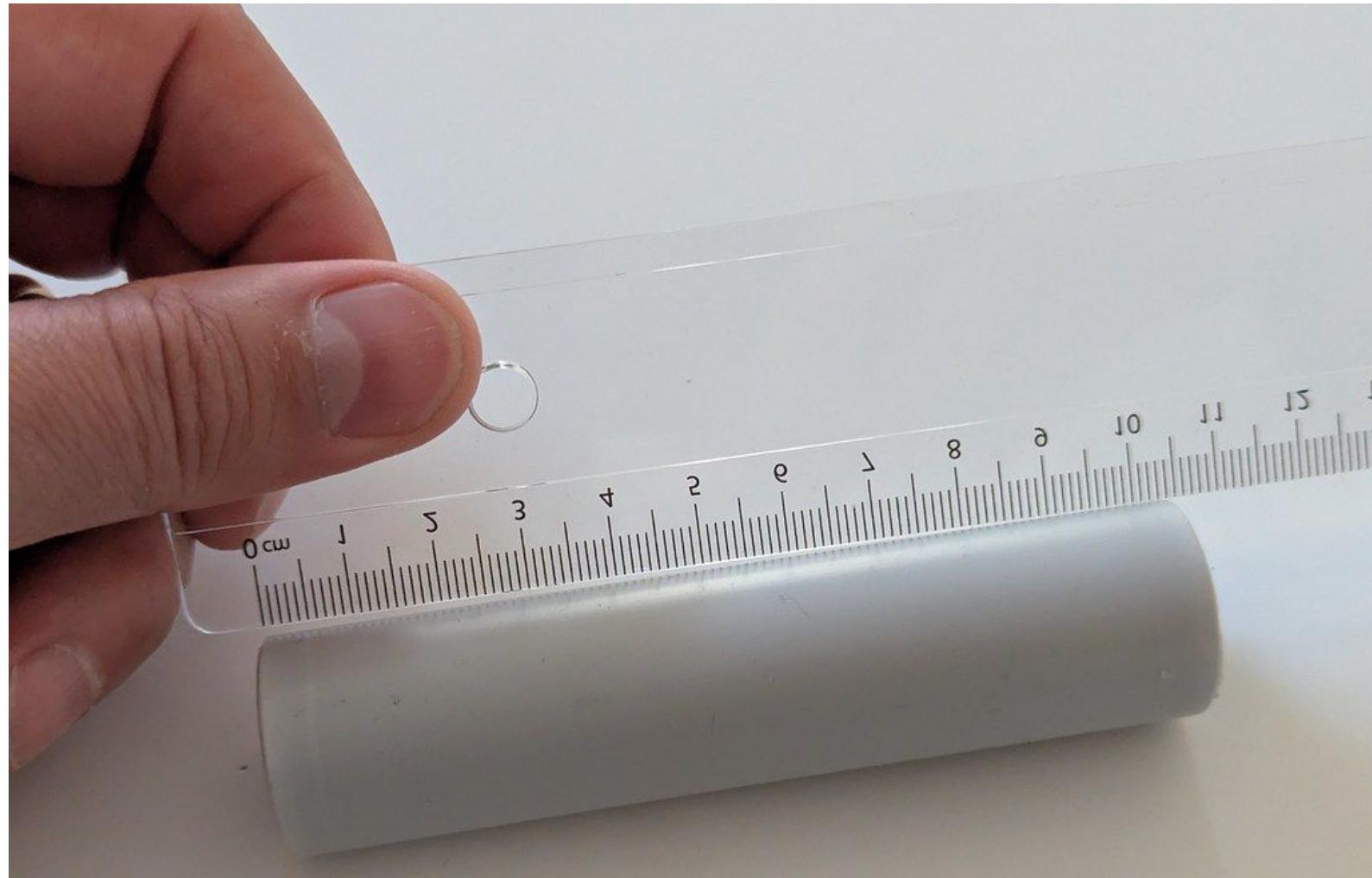
Reparieren im Haushalt mit 3D-gedruckten Teilen

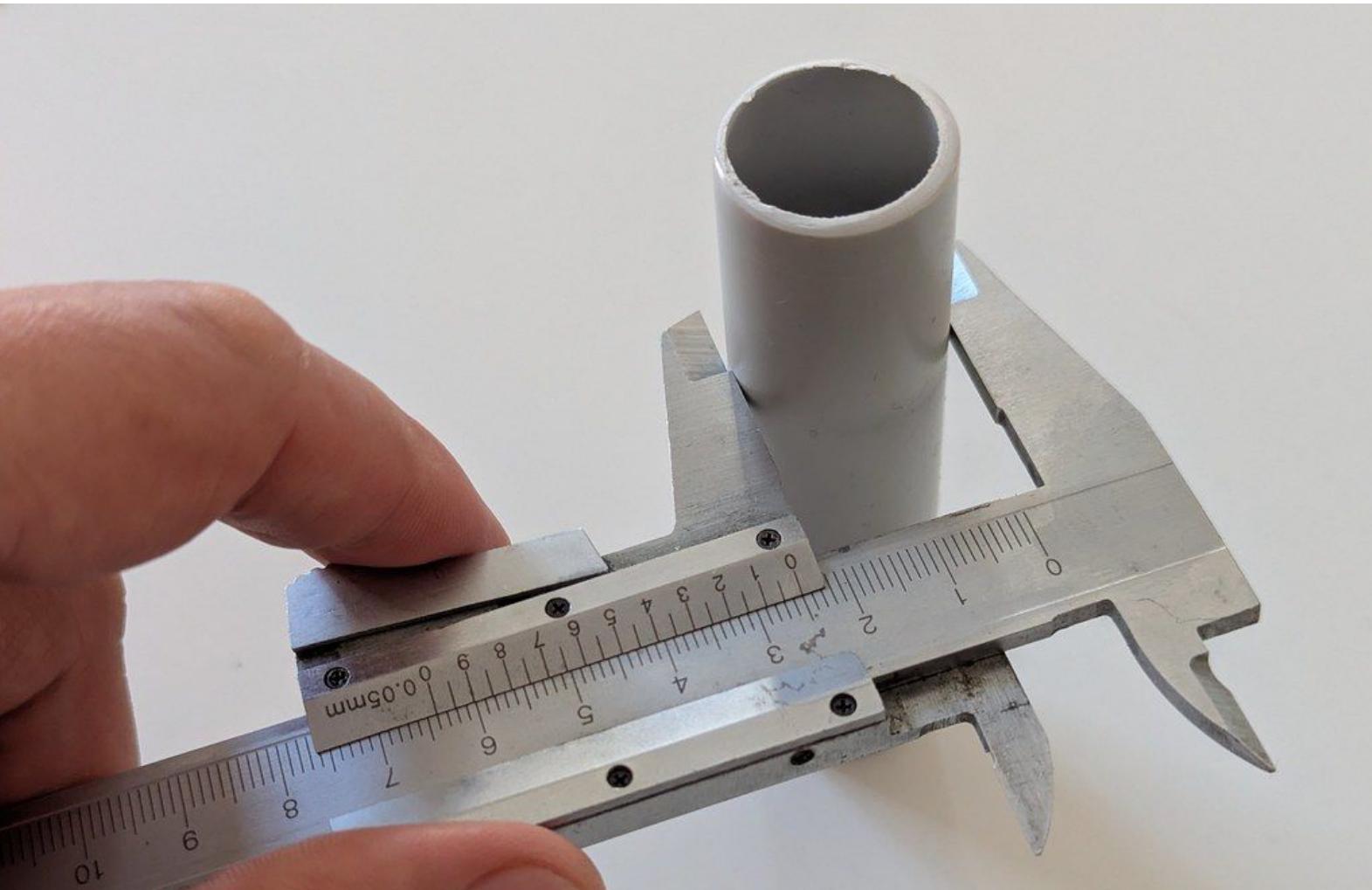
Screenshots = "fair use".

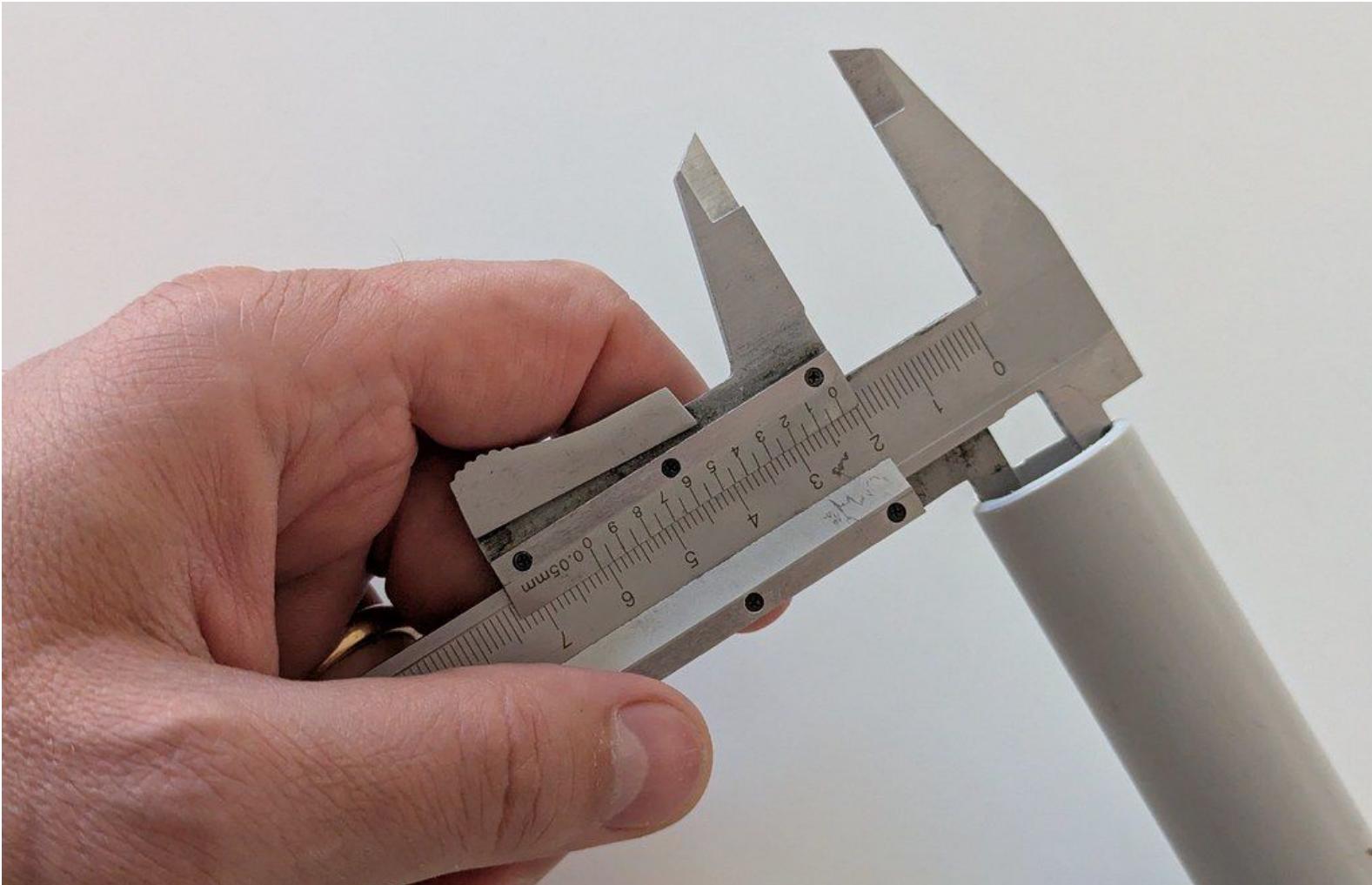
CC BY-SA 4.0, [@tamberg](#)

Messwerkzeug

Massstab und Schieblehre.

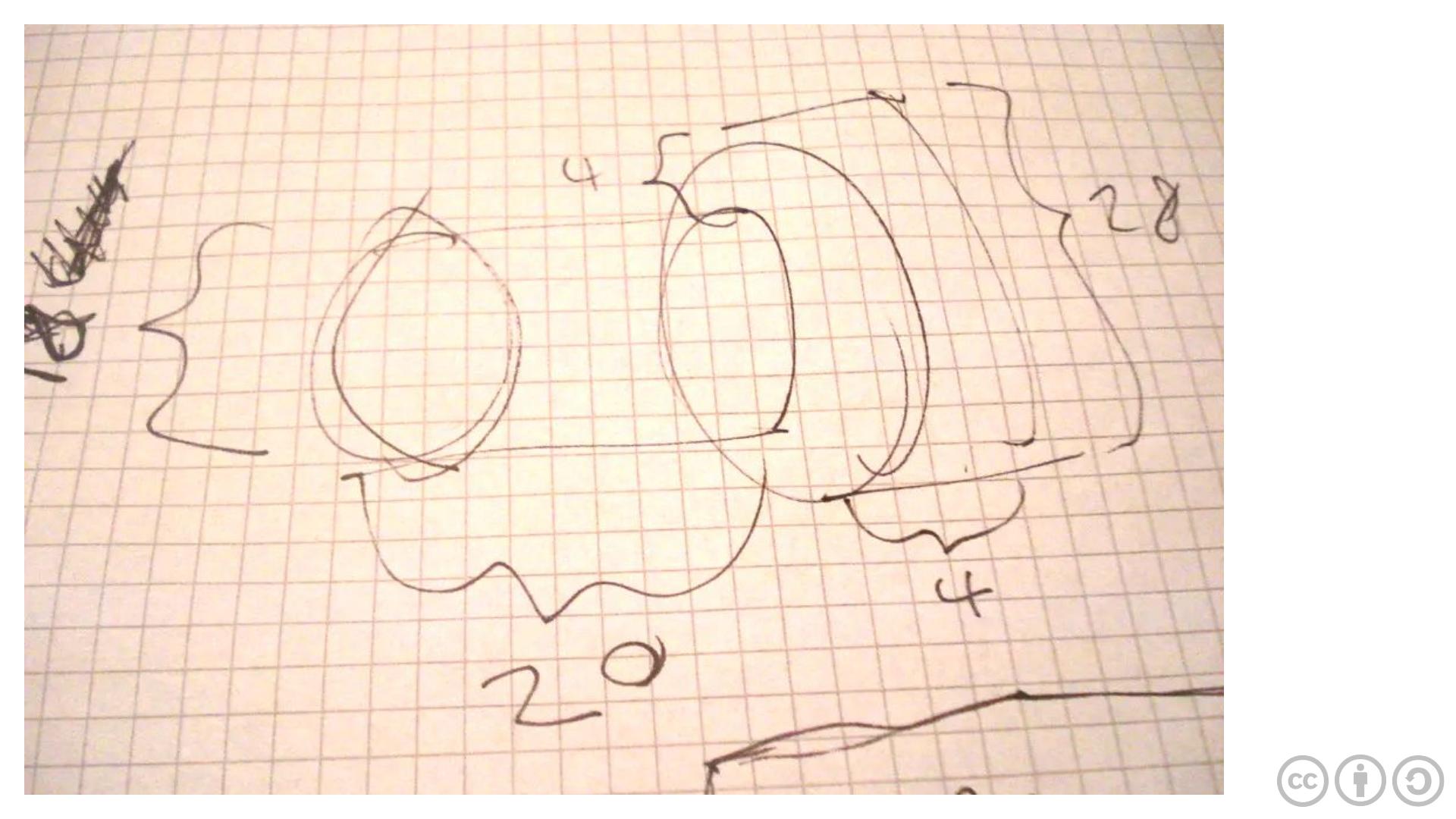






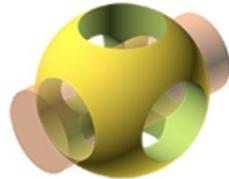
Denkwerkzeug

Notizblock und Stifte.



3D-Konstruktionswerkzeug

OpenSCAD, freie Designsoftware.



OpenSCAD

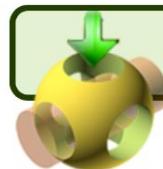
The Programmers Solid 3D CAD Modeller

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OpenSCAD is software for creating solid 3D CAD objects.

It is free software and available for Linux/UNIX, MS Windows and Mac OS X.



Download OpenSCAD

OpenSCAD 2021.01 Mac OS X

Other OSs and Versions



Tutorial

Get started with OpenSCAD



Libraries

Ready-made building blocks



Books

List of books on OpenSCAD



Cheat Sheet

Overview of modules and functions

Plug2.scad

Editor

```
1 $fn = 360;
2
3 di = 20;
4 do = 25;
5
6 h = do;
7 r = di / 2;
8 w = (do - di) / 2;
9
10 cylinder(h, r, r);
11 cylinder(w, r + w, r + w);
```

Console

```
Geometry cache size in bytes: 1000384
CGAL Polyhedrons in cache: 1
CGAL cache size in bytes: 1936208
Total rendering time: 0:00:03.720
Top level object is a 3D object:
Simple: yes
Vertices: 1440
Halfedges: 4320
Edges: 2160
Halffacets: 1446
Facets: 723
Volumes: 2
Rendering finished.
STL export finished: /Users/tamberg/Documents/Bitwasch/20250820_zuerich_lernt/Plug2.stl
```

Viewport: translate = [0.00 0.00 12.50], rotate = [55.00 0.00 25.00], distance = 110.98, fov = 22.50 (730x492)

OpenSCAD 2021.01

3D-Vorbereitungswerkzeug

PrusaSlicer, freie Druckzerlegesoftware.

Plater

Print Settings

Filaments

Printers

Printables

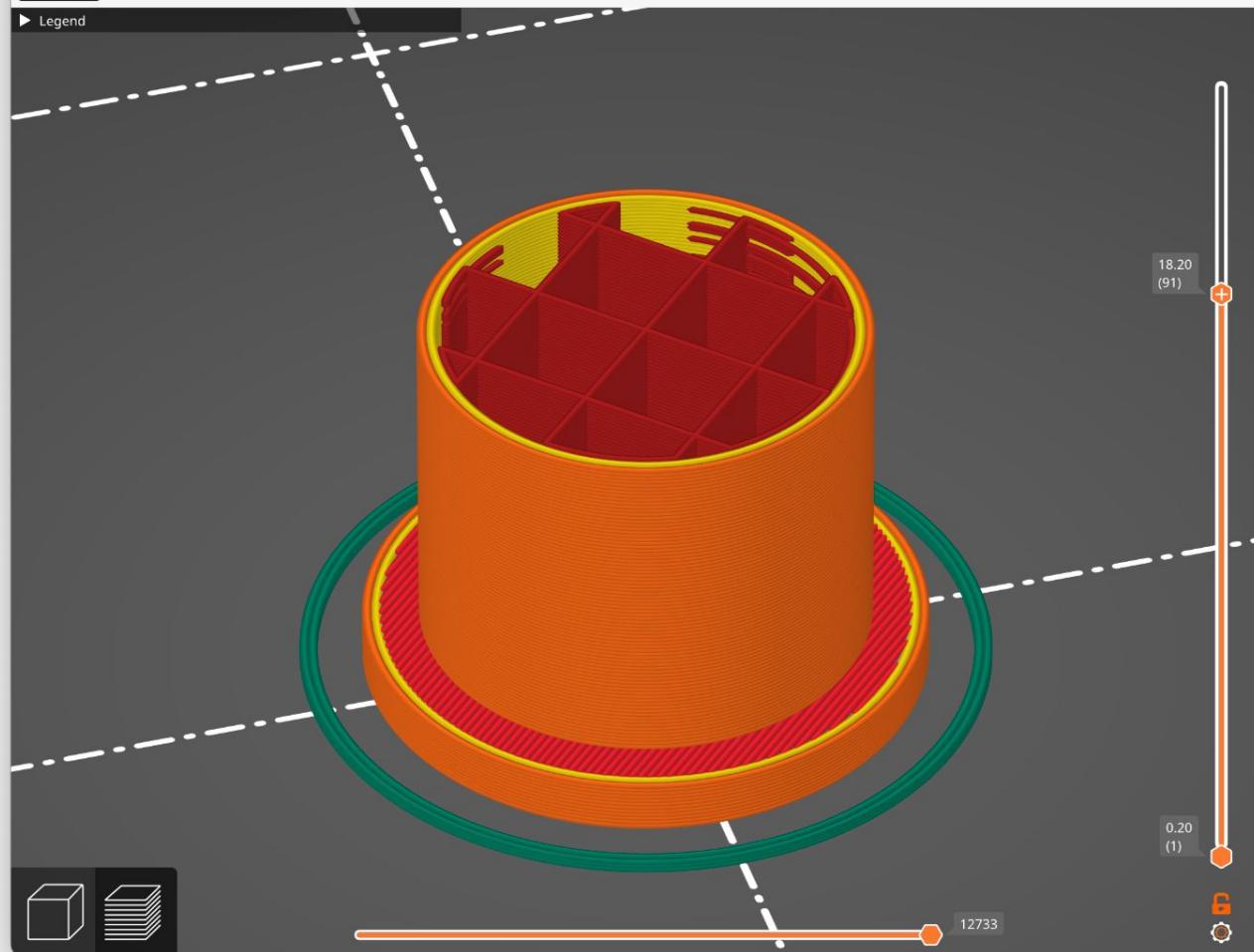
Enter a search term



Beginner mode

Log in

Legend



Print settings:

0.20mm SPEED

Filament:

Prusament PLA

Printer:

Original Prusa MINI & MINI+

Supports: None

Infill: 15%

Brim:

Sliced Info

Used Filament (g)
(including spool) 4.11 (197.11)

Used Filament (m) 1.38

Used Filament (mm³) 3315.11

Cost 0.12

Estimated printing time:

- normal mode 28m
- stealth mode 29m



12733

Export G-code

3D-Druckmaschine

Prusa MINI+, offene Hardware.



to all of you that bought a
3D-printer but don't know what to print
– we give you IKEA frekvens hacks.

click an image to download ready-to-print stl file.



download collection

Reparaturlebensdauer

Teile, die noch da sind.



Duschvorhangring

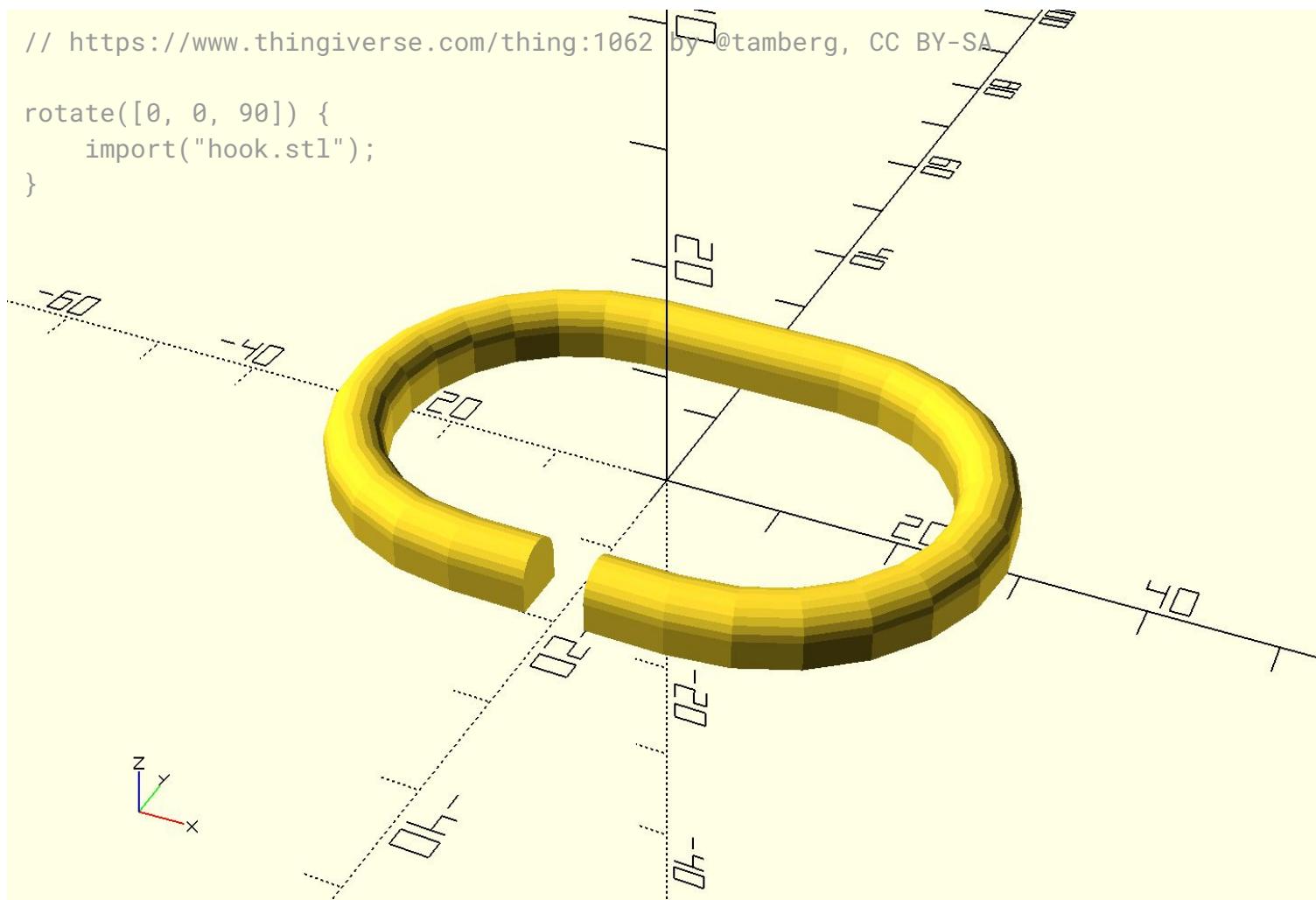
Teile, von denen eins fehlt.

2009



// https://www.thingiverse.com/thing:1062 by @tamberg, CC BY-SA

```
rotate([0, 0, 90]) {  
    import("hook.stl");  
}
```



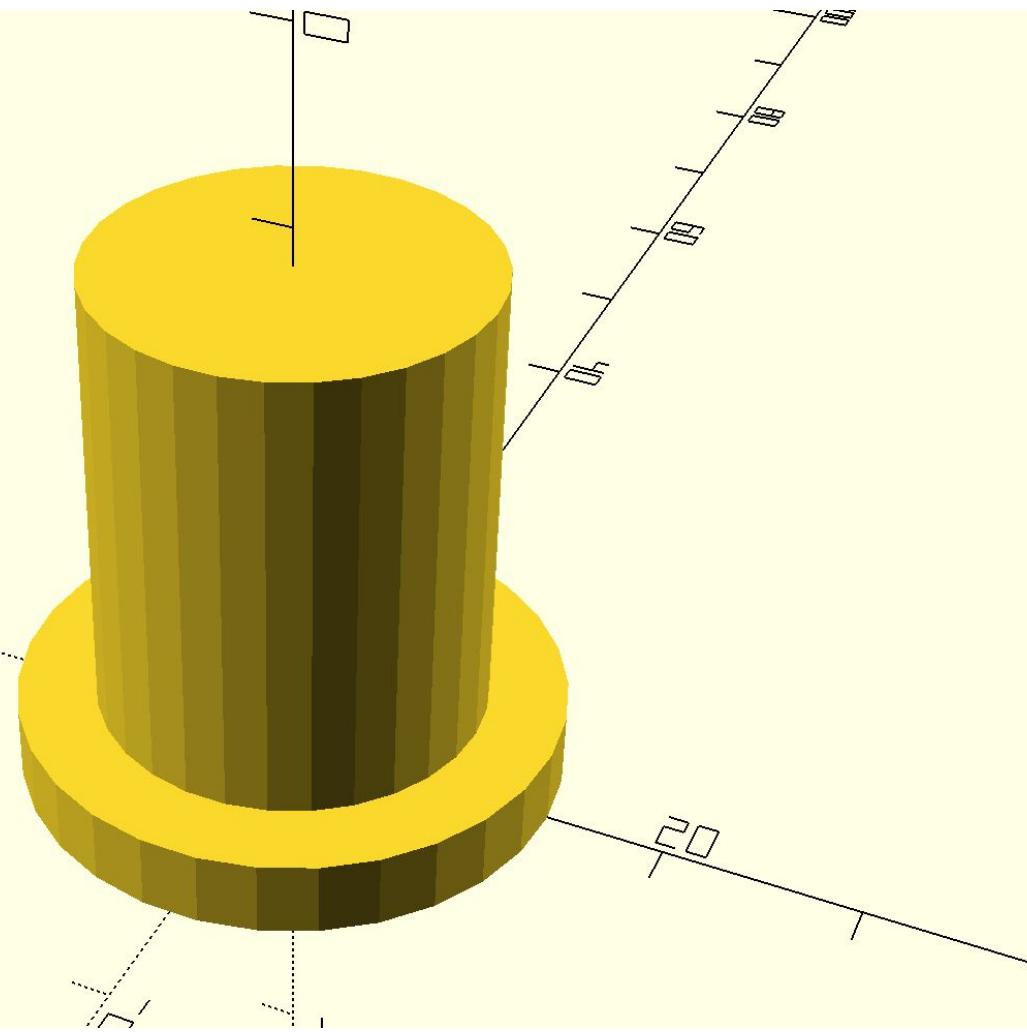
Velolenkerstöpsel

Teile, die verloren gehen.

2010



```
cylinder(28, 10, 10);  
cylinder(4, 14, 14);
```



```
$fn = 360;
```

```
di = 20;
```

```
do = 28;
```

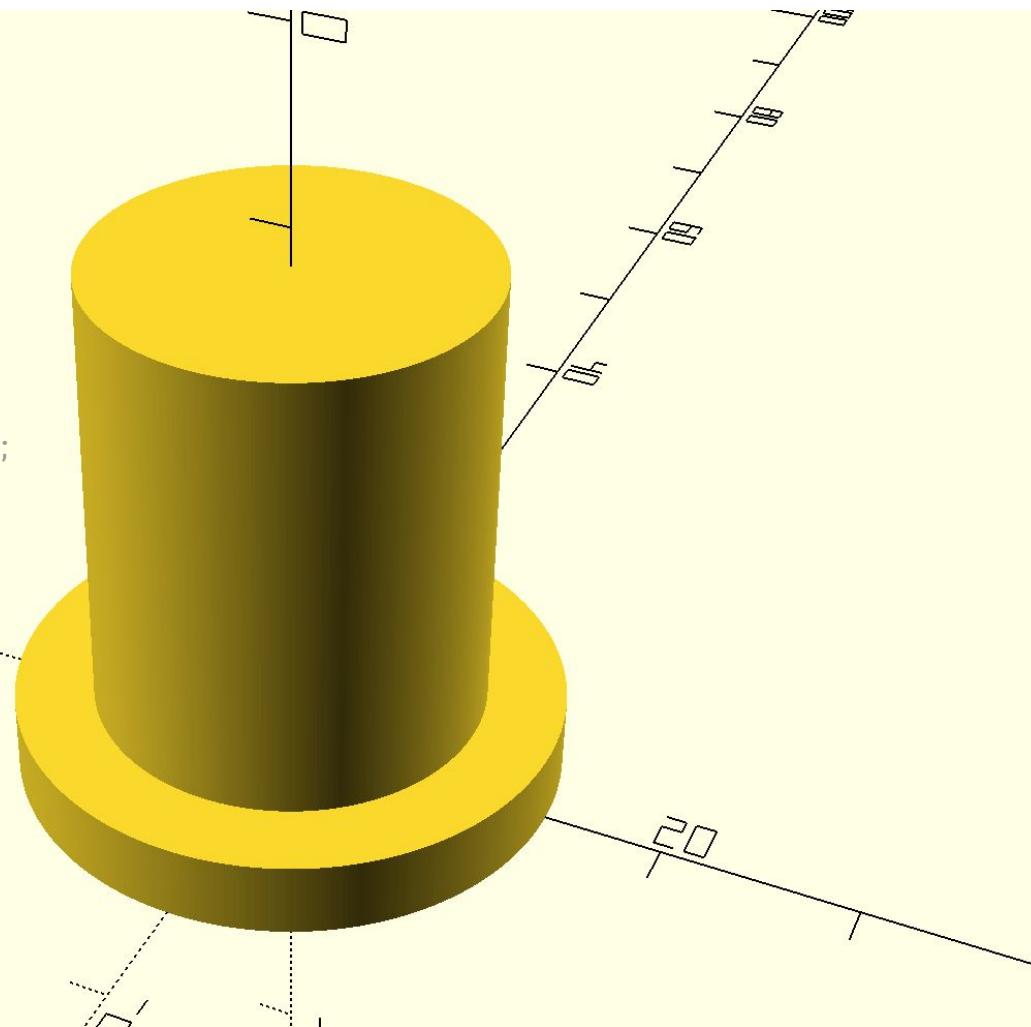
```
h = do;
```

```
r = di / 2;
```

```
w = (do - di) / 2;
```

```
cylinder(h, r, r);
```

```
cylinder(w, r + w, r + w);
```



Kleiderstangenbefestigung

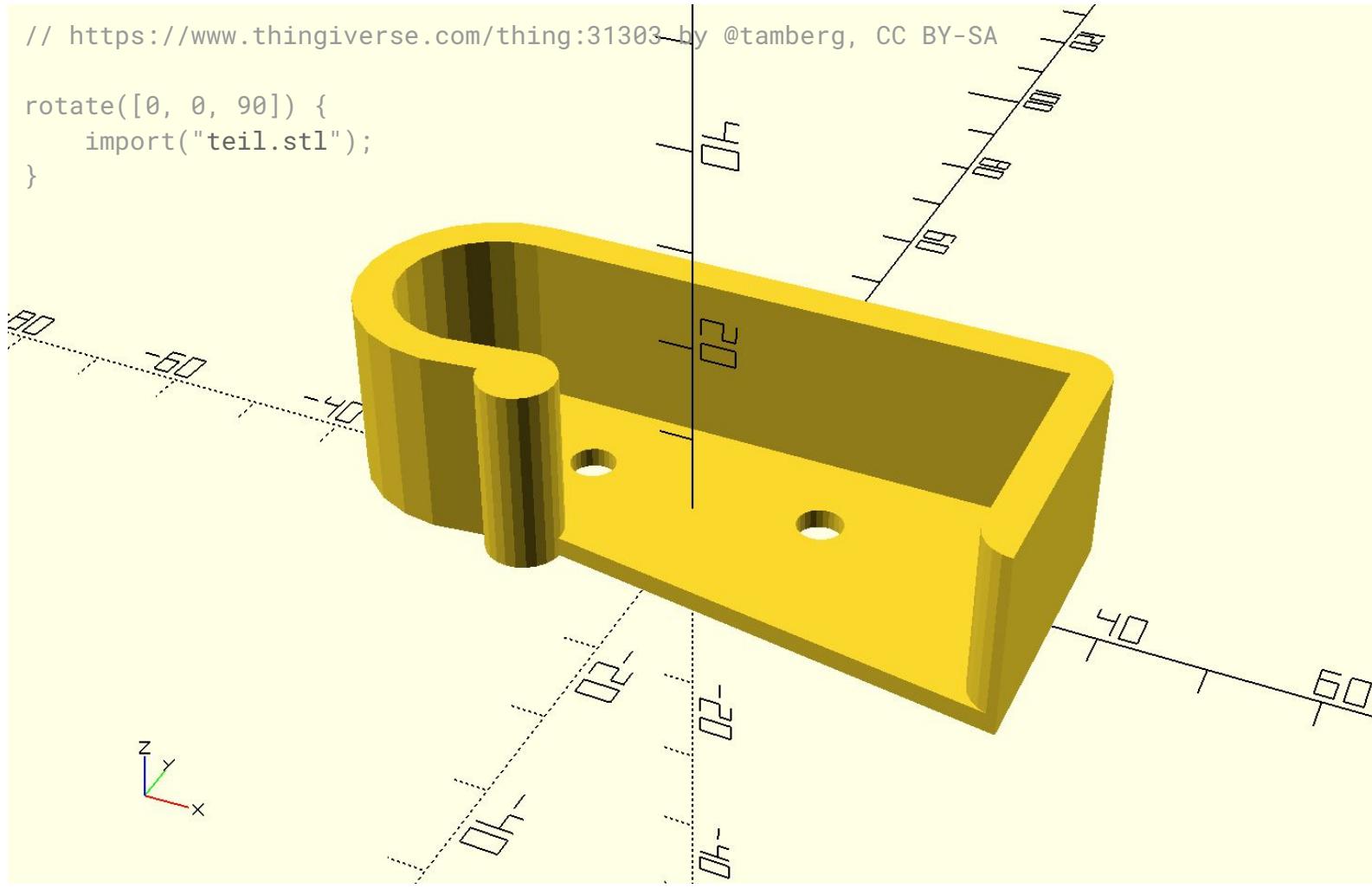
Teile, die was tragen müssen.

2012



// https://www.thingiverse.com/thing:31303-by @tamberg, CC BY-SA

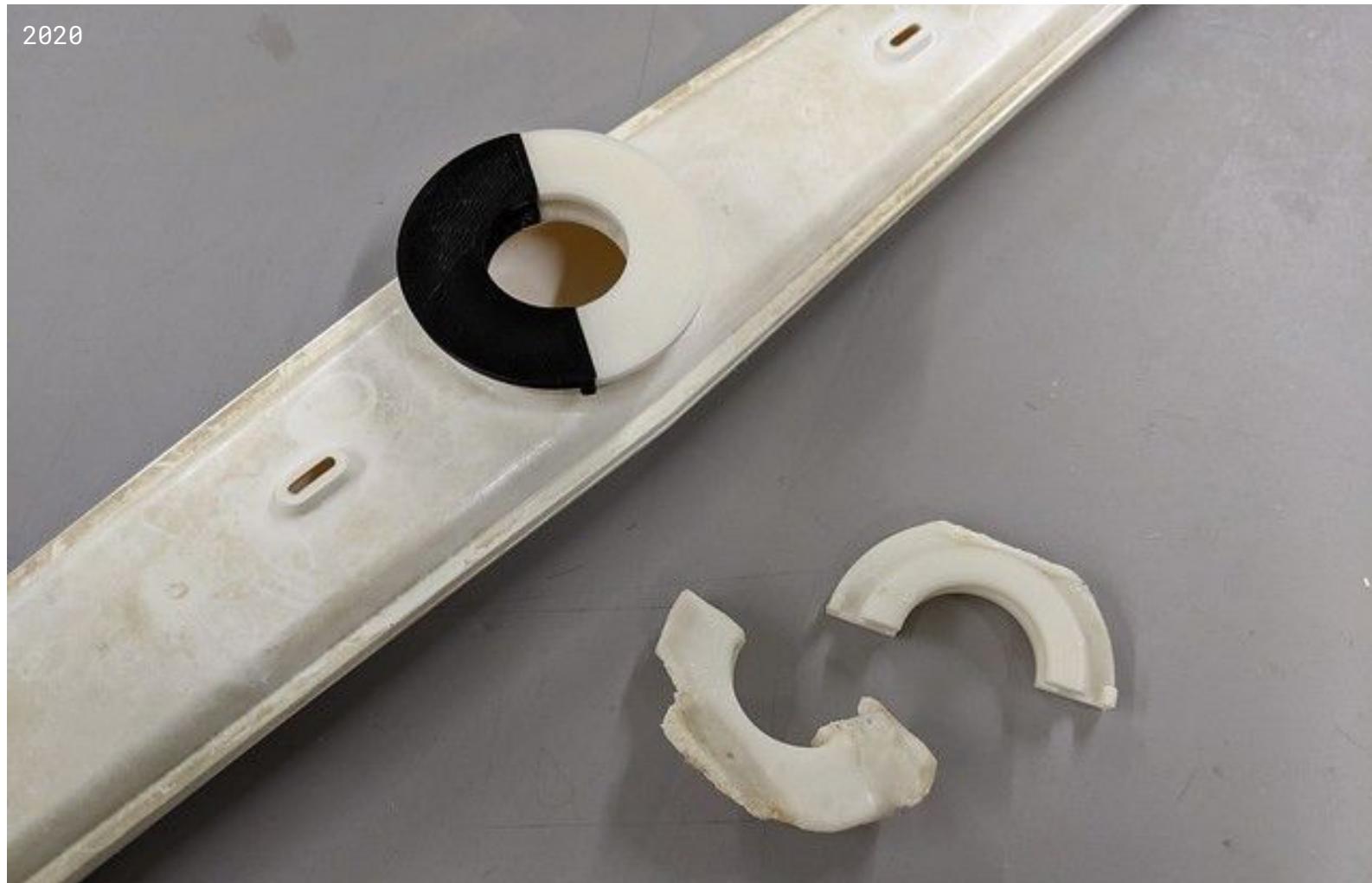
```
rotate([0, 0, 90]) {  
    import("teil.stl");  
}
```



Spülmaschinenteil

Teile, ohne die nichts läuft.

2020



// https://www.thingiverse.com/thing:4209845 by @tamberg, CC BY-SA

```
h0 = 0; h1 = h0 + 2.5; h2 = h1 + 1; h3 = h2 + 2; h4 = h3 + 1.5;
ri0 = 11.5; ri1 = 14; ri2 = ri1; ri3 = ri0 + (h4 - h3); ri4 = ri0 + (h4 - h3);
ro0 = 23; ro1 = 17.9; ro2 = 17.9; ro3 = 17.9; ro4 = 17.9;
d0 = 1.2; d1 = 2;

rotate_extrude($fn = 360, angle = 180) {
    union() {
        translate([ri0, h0]) { square([ro0 - ri0, h1 - h0]); }
        translate([ri1, h1]) { square([ro1 - ri1, 1]); }
        translate([ri2, h2]) {
            polygon(points = [[0, 0], [ro2 - ri2, 0],
                [ro2 - ri2 - d0, (h3 - h2) / 2],
                [ro2 - ri2, h3 - h2], [0, 2]]);
        }
        translate([ri3, h3]) {
            square([ro3 - ri3 - (h4 - h3), 2 * (h4 - h3)]);
            square([ro3 - ri3, (h4 - h3)]);
        }
        translate([ri4, h4]) { circle($fn = 360, r = h4 - h3); }
        translate([ro4 - (h4 - h3), h4]) { circle($fn = 360, r = h4 - h3); }
    }
}
rotate_extrude($fn = 360, angle = 5) {
    translate([ro0 - d1, h0]) { square([d1, h3 - (d1 * .2)]); }
    translate([ro0 - d1 + (d1 / 2), h3 - (d1 / 2)]) { circle($fn = 360, r = d1 / 2); }
}
```



Espressokannengriff

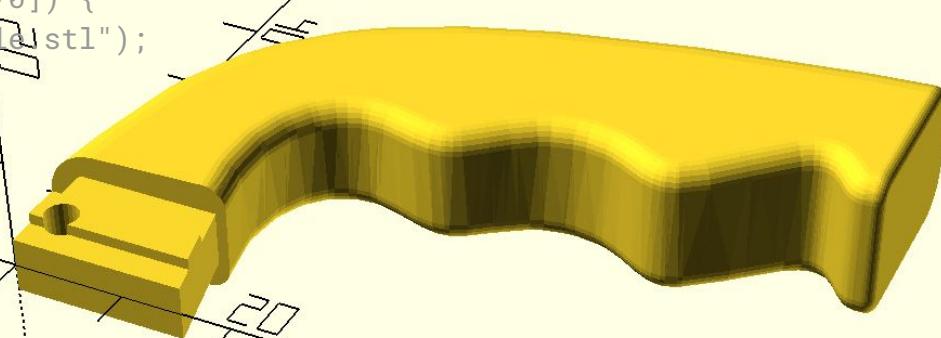
Teile, die nicht schmelzen.

2025



```
// Handle for coffee maker Bialetti Moka Timer by Balrok  
// on https://www.thingiverse.com/thing:3512321  
// This is repaired handle for coffee maker,  
// because i was broke my handle.
```

```
rotate([90, 0, 270]) {  
    import("handle.stl");  
}
```



Deckenlochdeckel

Teile, die in was reinpassen.

2025



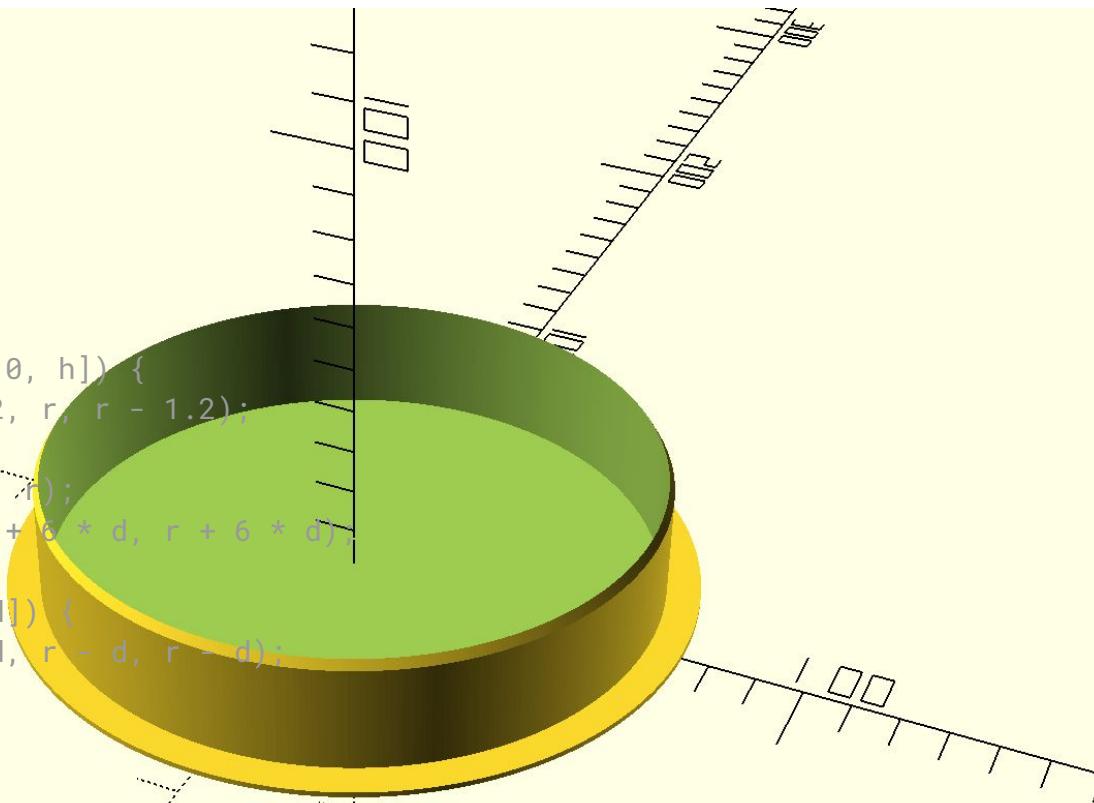
```
$fn = 360;
```

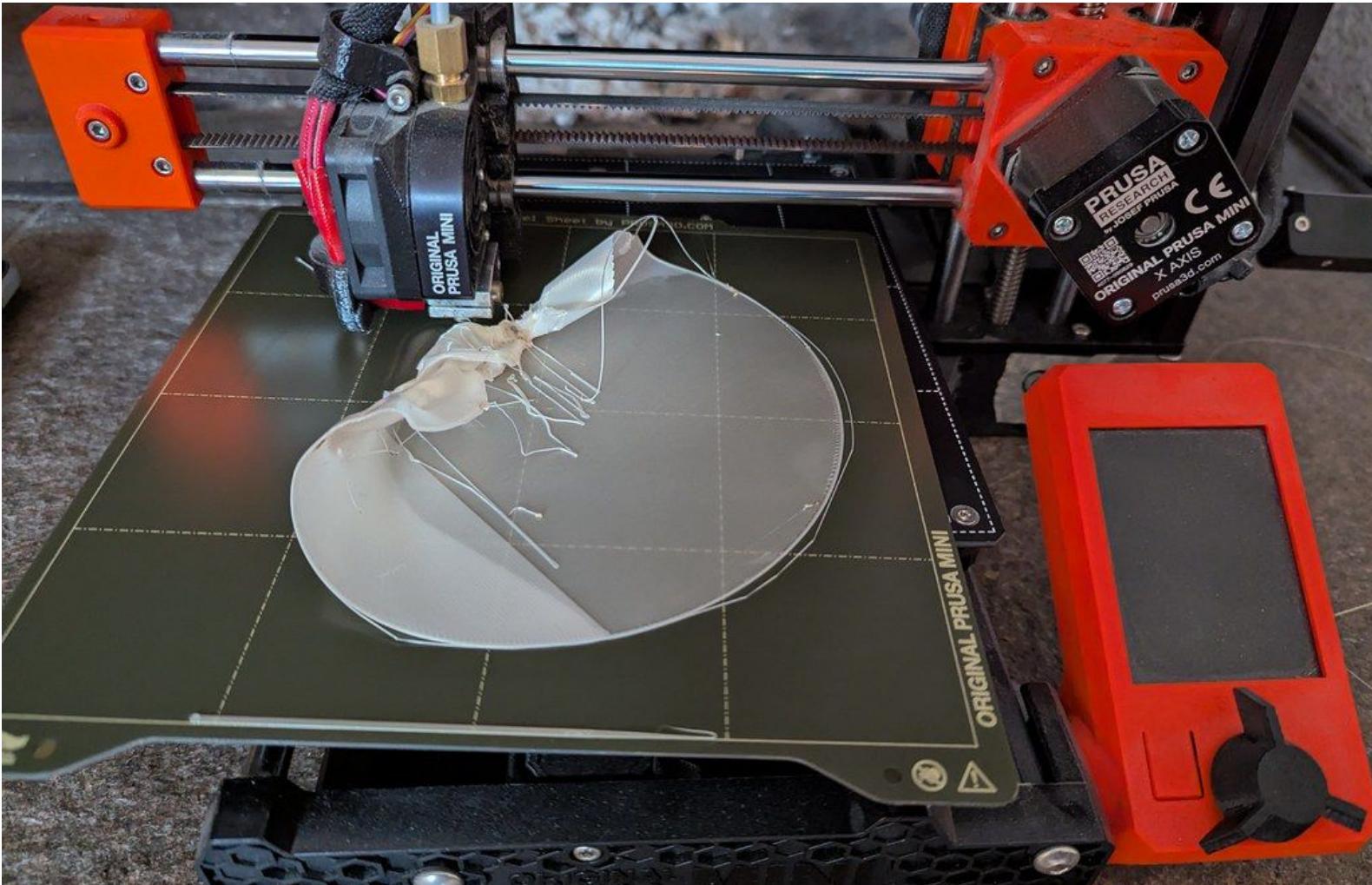
```
r = 134/2;
```

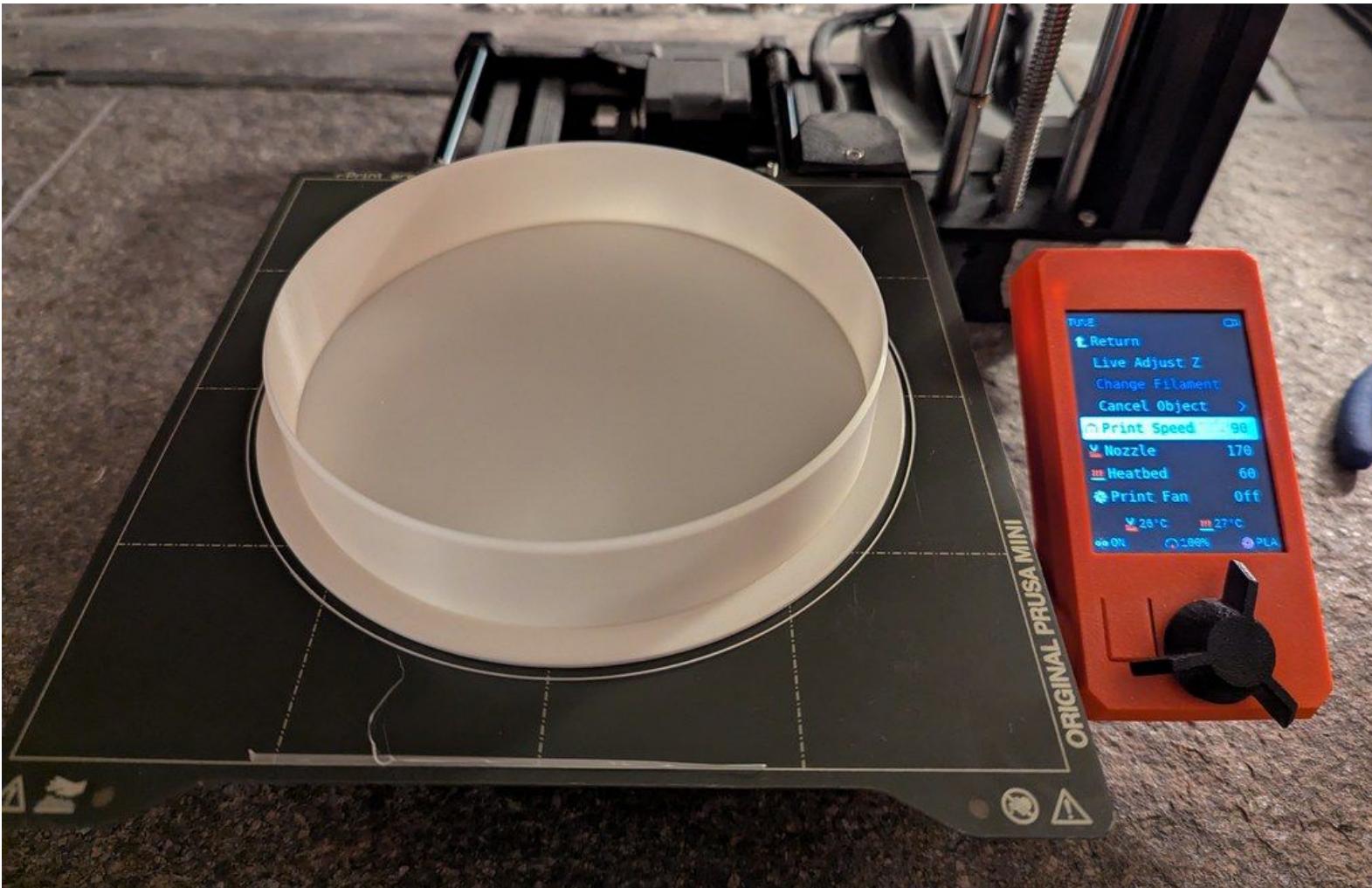
```
h = 25;
```

```
d = 1.2;
```

```
difference() {
    union() {
        translate([0, 0, h]) {
            cylinder(2, r, r - 1.2);
        }
        cylinder(h, r, r);
        cylinder(d, r + 6 * d, r + 6 * d)
    }
    translate([0, 0, d]) {
        cylinder(h + d, r - d, r - d);
    }
}
```







3D-Designbausteine

Teile von komplexeren Teilen.

```
$fn=360;
```

```
ri = 25.2/2;
```

```
d = 3;
```

```
ro = ri + d;
```

```
difference() {
```

```
    hull() {
```

```
        cylinder(2 * ri, ro, ro);
```

```
        translate([-ro, 0, 0]) {
```

```
            rotate([0, 90, 0]) cylinder(2 * ro, ro, ro);
```

```
        }
```

```
    }
```

```
#translate([0, 0, ro]) {
```

```
    cylinder(2 * ri, ri, ri);
```

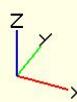
```
}
```

```
#translate([-1.5 * ro, 0, 0]) {
```

```
    rotate([0, 90, 0]) cylinder(3 * ro, ri, ri);
```

```
}
```

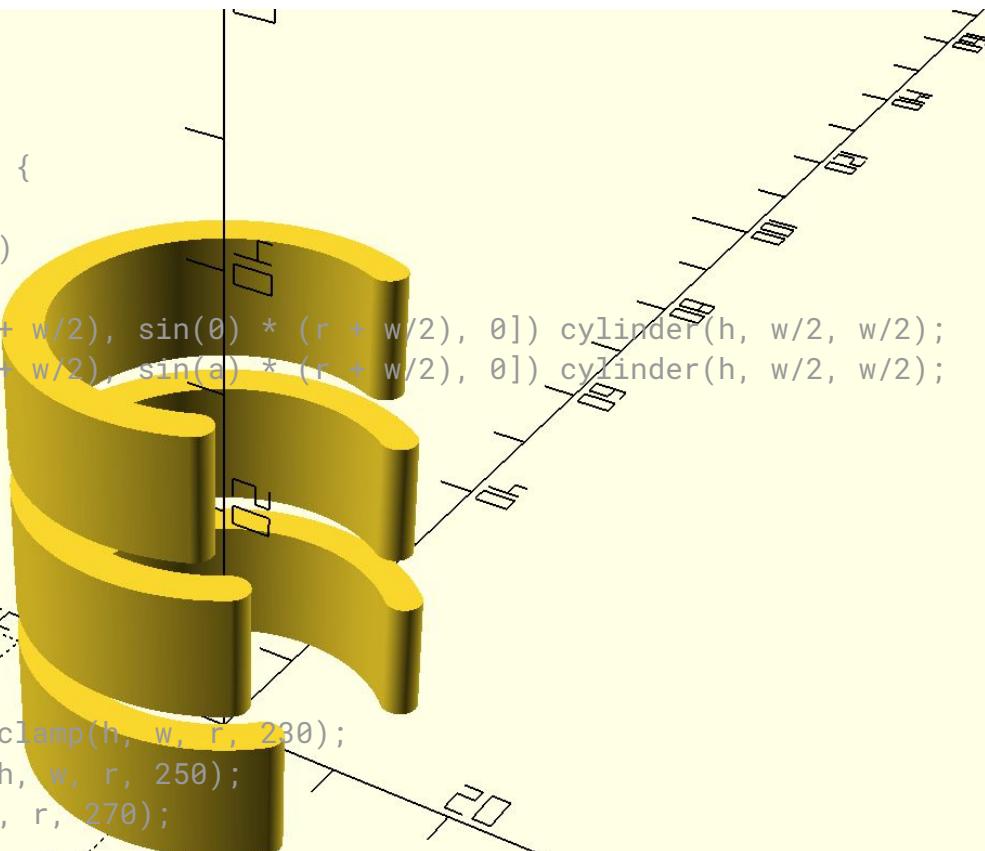
```
}
```



```
$fn=360;
```

```
module clamp(h, w, r, a) {
    rotate([0, 0, (360 - a)/2]) {
        rotate_extrude(angle=a)
            translate([r, 0, 0])
                square([w, h]);
        translate([cos(0) * (r + w/2), sin(0) * (r + w/2), 0]) cylinder(h, w/2, w/2);
        translate([cos(a) * (r + w/2), sin(a) * (r + w/2), 0]) cylinder(h, w/2, w/2);
    }
}
h = 10;
w = 3;
r = 25.2/2;

#cylinder(3 * (h + w), r, r);
translate([0, 0, 2 * (h + w)]) clamp(h, w, r, 230);
translate([0, 0, h + w]) clamp(h, w, r, 250);
translate([0, 0, 0]) clamp(h, w, r, 270);
```



Selberdrucken

Machen, Lernen, Teilen.

Druckorte

FabLab

Dynamo

Bitwäscherei

Danke

Recreazzz

Druckmaterial

PLA — Geruchlos

PET — Lebensmittelecht

ASA — Temperaturbeständig

Teil von

Zürich lernt

